HDCVI IR Vandal-proof Dome Camera

User's Manual

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Welcome

Thank you for purchasing our HDCVI camera!

This user's manual is designed to be a reference tool for your system.

Please read the following safeguard and warnings carefully before you use this series product!

Please keep this user's manual well for future reference!

Important Safeguards and Warnings

Electrical safety

- All installation and operation here should conform to your local electrical safety codes.
- The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the Limited power source is rated DC 12V or AC24V in the IEC60950-1. (Power supply requirement is subject to the device label).
- Please install easy-to-use device for power off before installing wiring, which is for emergent power off when necessary.
- Please check if the power supply meets the requirements of working voltage of the camera before operating the device (The material and length of the power supply cable will influence terminal voltage value).
- Please prevent the line cord from being trampled or pressed, especially the plug, power socket and the junction from the device.

Environment

- Please don't aim the device at strong light (such as lighting, sunlight and so on) to focus.
- Please transport, use and store the device within the range of allowed humidity and temperature.
- Please do not allow water and other liquid falling into the camera in case that the internal components are damaged.
- Please keep the sound ventilation in case of heat accumulation.
- Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.
- Please pack the device with standard factory packaging or material with same quality when transporting the device.
- It is recommended to use the device together with lightning protection device to enhance lightning protection effect.
- It is recommended to GND the device to enhance device reliability.
- It is advised to use qualified video transmission cable to improve video quality. It is recommended to use RG59 coaxial cable or higher standard.

Warning

- Please use the standard accessories provided by manufacturer and make sure the device is installed and fixed by professional engineers.
- Please prevent the device surface from the radiation of laser beam when using laser beam device.
- Please do not provide two or more power supply modes for the device, otherwise it may cause damage to the device.

- Any device is not supported to be connected between the camera and PoC Transceiver when the camera is in the condition of PoC power supply, including UTC, Balun, optical transceiver, distributor and convertor etc. Otherwise it may burn the connected device.
- PoC supply voltage is up to 52V. Therefore please do not dismantle the device during normal operation; otherwise it may cause danger to both device and users due to high voltage.

Statement

- Please refer to the actual product for more details; the manual is just for reference.
- The manual will be regularly upgraded according to the product update; the upgraded content will be added in the manual without prior announcement.
- Please contact the customer service for the latest procedure and supplementary documentation.
- The company is not liable for any loss caused by the operation which is not followed by the manual.
- Please refer to the company's final explanation if there is any doubt or dispute.

1 Packing List

Please check if there is any obvious damage to the device appearance when opening the packing box, and confirm if the accessories are in accordance with those in the list, please refer to Table 1-1 for more details about the accessories.

Accessory Name	Quantity
Camera	1
User Manual	1
Installation Accessory Bag	1
Installation Position Map	1
L-shaped Wrench	1

Table 1-1

2 General Introduction

2.1 Overview

This series HDCVI camera conforms to the HDCVI standard. It supports video signal high-speed long distance transmission without any delay. It can be controlled by the HCVR conforming to the HDCVI.

2.2 Features

- Adopts high-performance CMOS image sensor, megapixel definition.
- For 720P series, it supports RG59 coaxial cable transmission without any loss. The distance is over 800m. For 1080P, 4M and 4K series, it supports RG59 coaxial cable transmission without any loss. The distance is over 500m. PoC power supply only supports transmission distance up to 400m via RG59.
- High speed, long distance and real-time transmission.
- Supports ICR switch to realize monitoring both in daytime and at night.
- Supports auto exposure, AWB, auto electronic shutter, auto electronic gain.
- Supports OSD menu.
- Supports WDR.
- Supports 3DNR.
- Supports DC12V/ PoC (Power over Coax) power supply.
- Supports power reverse output function.
- Supports IP67 compliance.
- Supports IK10 compliance.
- It can be applied to scenarios with complex light conditions and requirement of UHD image quality, such as financial, telecom, supermarket, hotel, government, school, airport, factory, public safety, forensic and safe city etc.

3 Device Structure

3.1 Dimension

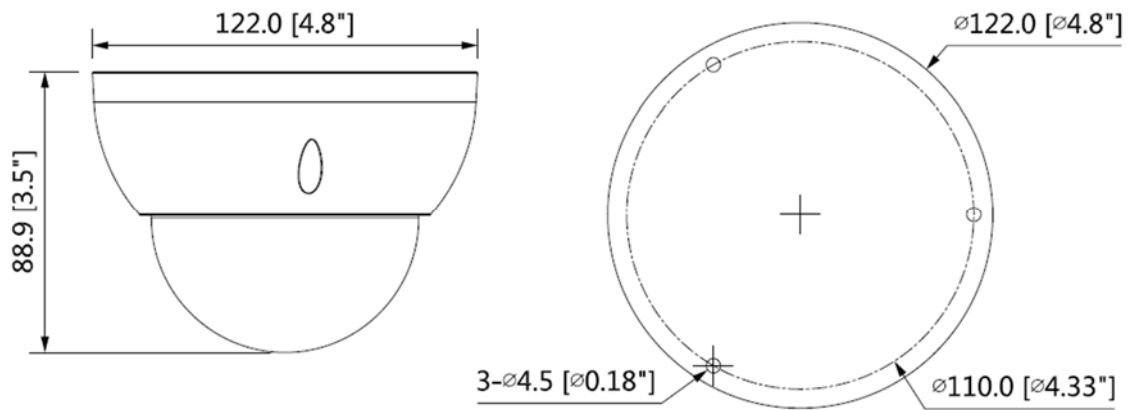Please refer to Figure 3-1 for the dimension. The unit is mm.

Figure 3-1

3.2 Cable Port

Note
- The following figure is for reference only, which is used to know the functions of cable port.
- Different devices may have different cables, please refer to the actual product for more details.

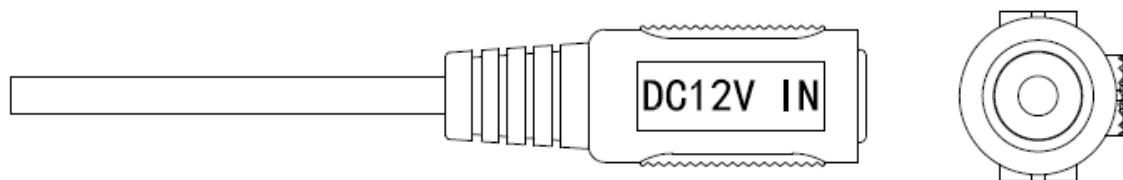Refer to Figure 3-2 for DC 12V power input port.

Figure 3-2

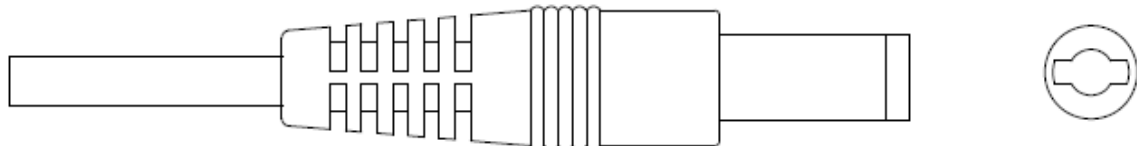Please refer to Figure 3-3 for power reverse output port.

Figure 3-3

Note
- The power consumption of the device which is connected to the power reverse port shall be below 2W.
- Access device requirements: the devices whose supply frequency is higher than 1MHz, such as sound pick-up, temperature/humidity sensor and other devices without power consumption change. It may cause image flickering if it is accessed to the devices whose

supply frequency is less than 1MHz, such as fan, Hall sensor, loudspeaker, motor and other electromechanical devices with power consumption change.
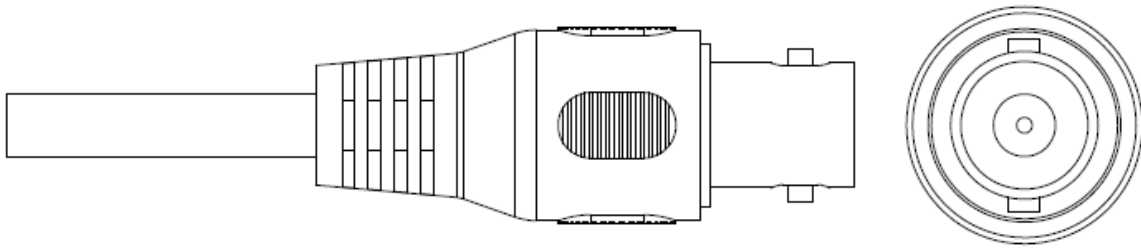
Refer to Figure 3-4 for video output port (gray).

Figure 3-4

Note
- The port is only used as video output port when it is DC12V power supply; it supports switchable HD/SD output. HD/SD switch can be realized via OSD menu or UTC Controller.
- The port can realize both power input via coax and video output at the same time during PoC power supply. PoC can be supported only in the HDCVI video output mode.

Warning
- Any device is not supported to be connected between the camera and PoC Transceiver when the camera is in the condition of coax power supply, including UTC, Balun, optical transceiver, distributor and convertor etc. Otherwise it may burn the connected device.
- PoC supply voltage is up to 52V. Therefore please do not dismantle the device during normal operation; otherwise it may cause danger to both device and users due to high voltage.

4 Installation

The dome camera mainly adopts ceiling mount, the installation location includes ceiling and wall.

Caution

- Please install the device in time after it is taken apart, which is to avoid the camera module being exposed in humid environment for a long time.
- The installation ceiling or wall shall be thick enough to sustain at least 3X weight of the camera.
- As for the installation mode of side cable outlet, it has to make sure the direction of side cable outlet is in accordance with the direction of installation position map when pasting the installation position map and it has to pull the cable through pedestal outlet slot and then lock the screws firmly.
- Please do not remove the electrostatic adsorption film on the surface of transparent cover before installation and debugging are completed, which is to avoid damage during installation; Please do not touch the dome cover after removing the electrostatic adsorption film, which is to avoid leaving stain.
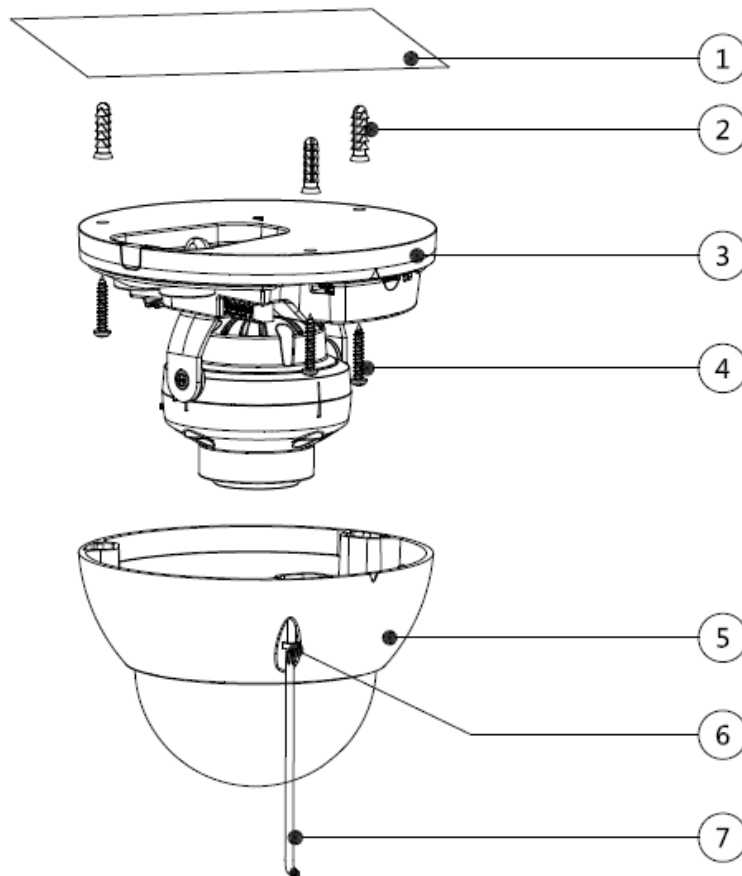- The following installation figure is for reference only.

Figure 4-1

Step 1

Take out the installation position map from the accessories bag, stick it on the ceiling or wall ① according to the cable exit location, dig holes on the installation surface according to the

installation position map, take out the expansion bolts ② from the accessories bag and knock them into the mounting holes and fix them firmly.

Step 2

Use inner hex wrench ⑦ to loosen the fixing screw ⑥ on the dome enclosure and take down the dome enclosure ⑤。

Step 3

Adjust the location of dome pedestal ③ according to top cable outlet or side cable outlet, pull the cable through the side cable slot on the installation surface and pedestal (please skip this step if it is top cable outlet), align the fixing holes of screws on the dome pedestal with the fixing holes of expansion bolts on the installation surface, and then inset the self-tapping screws ④ into the expansion bolts and lock them firmly, and fix the dome on the installation surface.

Step 4

When it adopts DC12V power supply: Connect the video output port of device cable to the back-end device and connect the power port of device cable to power.

When it adopts PoC power supply: Connect the device video output port to PoC Transceiver; Connect PoC Transceiver to back-end device.

Step 5

Adjust the lens angle to a proper monitoring location after image is displayed on the back-end encoding device, and adjust focal length to make image clear, which is shown in Figure 4-2.
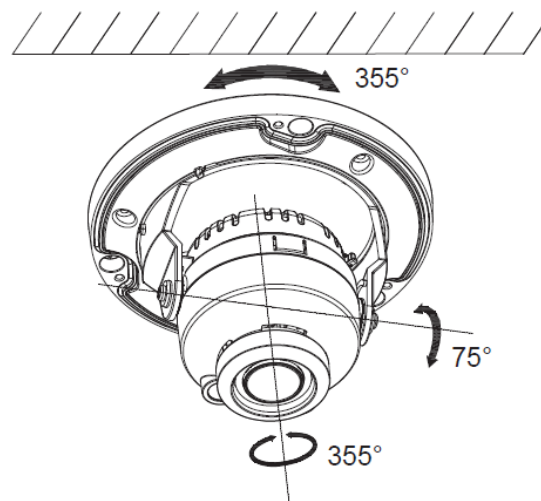

Figure 4-2

Step 6

Use enclosure fixing screw ⑥ to fix the dome on the pedestal.

So far, device installation and cable connection have been completed, you can check monitoring image via back-end encoding device.

5 HCVR Settings

5.1 Control Coaxial Device

This HDCVI camera series can adjust OSD menu via coaxial control. After connecting the camera to HCVR, from Main Menu->Setting->System->PTZ, you need to select the channel number for access and set "control mode" as "HDCVI" and the "protocol" as "HD-CVI". Click "Save" button after setting is completed. See Figure 5-1.
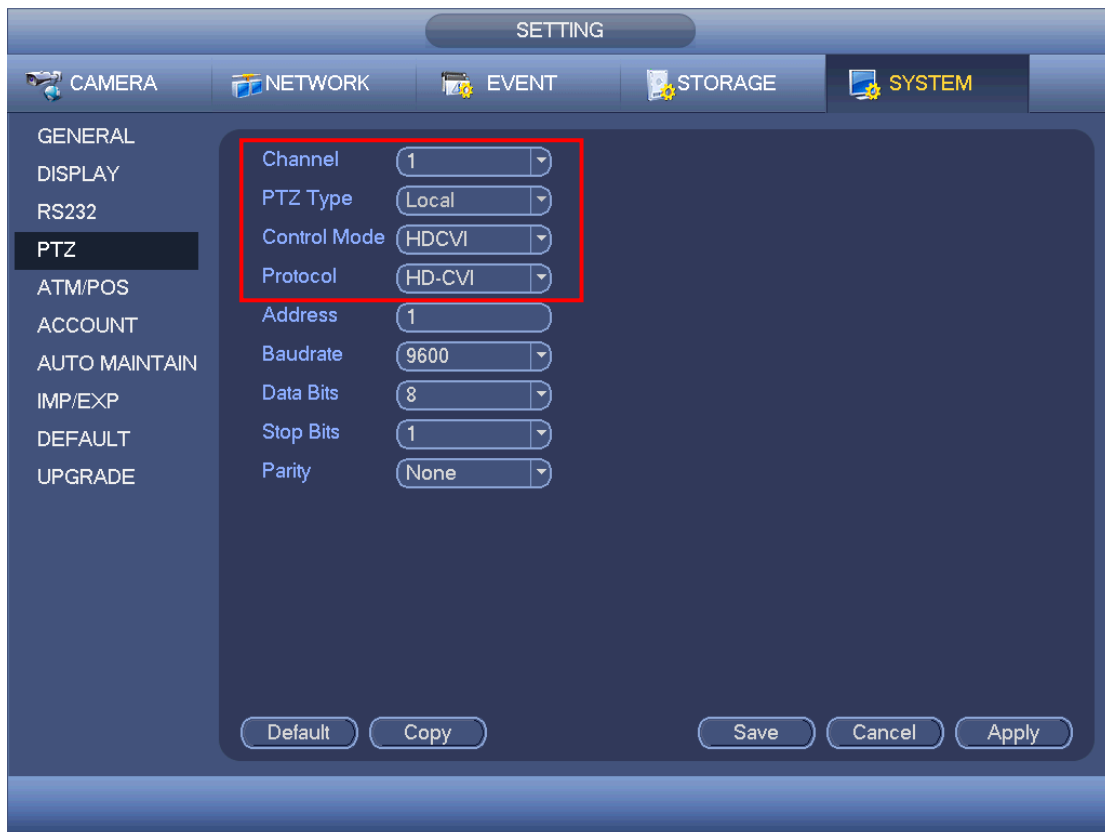

Figure 5-1

6 Menu Function

6.1 Menu Operation

Click the right mouse button and select "PTZ Control", then you will see the "PTZ Setup" menu, which is as shown in Figure 6-1 and Figure 6-2.

Figure 6-1

Figure 6-2

See Table 6-1 for the details of button functions.

Button	Function	
☐ + Enter	Open menu.	
▲ 、 ▼	Select menu item.	
◀ 、 ▶	Select menu value.	
⊖ Zoom ⊕	Adjust lens zoom and auto trigger focus.	**Note** These buttons are only supported by motorized vari-focal camera.
⊖ Focus ⊕	Adjust the lens focus	
⊖ Iris	Auto focus under the current zoom rate.	

Table 6-1

Please refer to Figure 6-3 for more details about OSD menu.
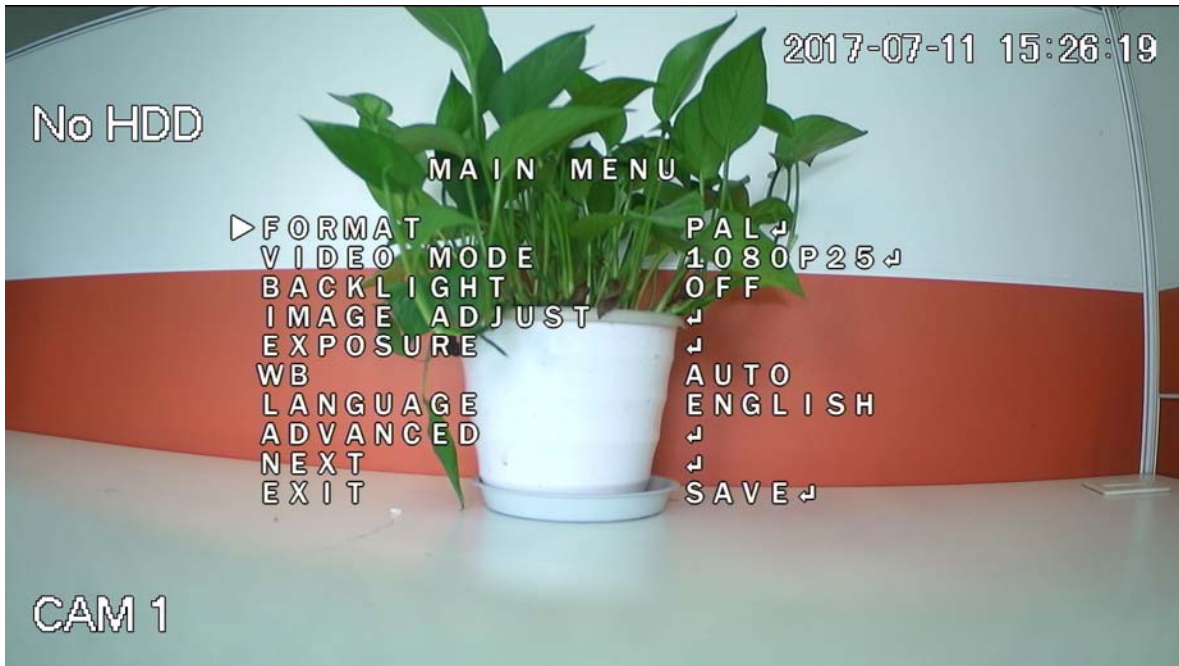
Figure 6-3

If there is "↵" in the parameter value, click the "Enter" button in "Menu Operation" interface to go to the 2nd menu. Click "Return" button to go back to the previous menu interface. Please refer to Table 6-2 for more details about menu path.

1st Menu	2nd Menu	
Format	PAL	
	NTSC	
Video Mode	1080P25/1080P30	
	720P25/720P/30	
Backlight	BLC	Low/Middle/High
	WDR	1～5
	HLC	0～100
	Off	
Image Adjust	Sharpness	0～10
	Brightness	0～100
	Saturation	0～100
	Gamma	0.45~1
	2DNR	Low/Middle/High/Off
	3DNR	Low/Middle/High/Off
	Back	Back/Save
Exposure	Mode	Auto/ Manual
	Level	0～100
	Gain	0~15
	Slow Shutter	Off/Auto
	Back	Back/Save
WB	Auto	
	Manual	Blue gain (0～100) /Red gain (0～100)
	Indoor	
	Outdoor	

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1st Menu	2nd Menu	
	AWT	
Language	Chinese/English/Korean/Japanese/German/Russian/French/Portuguese/ Spanish/Polish/ Italian	
Advanced	Camera name	
	Mirror	Horizontal/Vertical
	Lens	Auto Focus/Reset/Back
	Smart IR	Auto/IR NC
	Defog	
	Motion	
	Privacy mask	
	Bad Px Comp	Live BPC/White BPC/Black BPC/Back
	Next	Video Output/System Info
	Back/Exit	
Next	Day/Night	
	Default	
	Back/Save	
Exit	Save/Not Save	

Table 6-2

Note

● The operation interface above is an example, different back-end devices have different operation interface, please refer to corresponding HCVR manual for more details.

● Menus are different according to different products, please refer to actual device for exact menu.

6.2 Image Adjust

Select "Main Menu > Image Adjust" to set the image parameter of the camera.

6.2.1 Sharpness

It is used to adjust the image definition and image edge sharpness.
The bigger the value is, the higher the detail contrast of the image plane becomes, and the image becomes clearer. The image tends to generate noise when the value is set too high. The range is between 0 and 10.

6.2.2 Brightness

It is used to adjust the overall brightness of the image. Users can adjust the value when the image becomes too bright or too dark. Both the dark and bright area will be increased or lowered equally at the same time during adjustment.
The bigger the value is, the brighter the image becomes. The image tends to be foggy or overexposed if the value is set too high. The range is between 0 and 100.

6.2.3 Saturation

It is used to adjust the color purity. The threshold won't cause any effect to the overall brightness of the image.
The bigger the value is, the higher the purity becomes and more flamboyant the color becomes. The image color becomes too strong when the value is set too big; the image color is not flamboyant enough when the value is set too small. The range is between 0 and 15.

6.2.4 Gamma

It is used to optimize brightness and contrast and implement subtle adjustment of bright and dark layer.
The image becomes foggier and brighter when the value gets bigger; the image becomes sharper and darker when the value gets smaller. The range is between 0.45 and 1.

6.2.5 2DNR

It is used to reduce the image noise.
The bigger the value is, the smaller the noise becomes. The range is between Low and High.

6.2.6 3DNR

It is used to reduce image noise in low illuminance environment.
Compared to general 2DNR, 3DNR not only realizes noise reduction for brightness and saturation of the video separation signal but also for the original data generated by sensor, which can greatly improve noise reduction capability and make image clearer and brighter, but it is easy to generate smear.
The bigger the value is, the smaller the noise becomes; but it is easier to lose image details and generate smear. The range is between Low and High.

6.3 Advanced

Select "Main Menu > Advanced" to set the advanced functions of the camera.

6.3.1 Smart IR

Enable smart IR function, the IR light can be auto adjusted according to the brightness of current environment, which will effectively solve the problem of face overexposure and so on. The range is between 0 and 15.

Appendix Maintenance

Attention

Please maintain the device according to the following instructions in order to ensure the image effect and long-term stable operation of the device.

Maintenance for lens and mirror surface

The lens and mirror surface are covered with antireflection coating, so it may produce hazardous substance and lead to performance reduction or scratch, dimness etc. Please don't touch sensor CCD (or CMOS) directly, you can use hair dryer to remove dust or dirt on the lens surface. Please use dry cloth slightly soaked with alcohol to get rid of dust and dirt gently if it is necessary to be cleaned.

Camera Body Maintenance

Use a soft dry cloth to clean the camera body when it is dirty, in case the dirt is hard to remove, use a clean dry cloth soaked with mild detergent and wipe gently, make it dry later. Don't use volatile solvent like alcohol, benzene, thinner and etc. or strong detergent with abrasiveness, otherwise it will damage the surface coating or reduce the working performance of the device.

Maintenance for Dome Cover

Dome cover is an optical device, please don't touch or wipe cover surface directly during installation and use, please refer to the following methods to deal with once dirt is found:

Stained with dirt

Use oil-free soft brush or hair dries to remove it gently.

Stained with grease or fingerprint

Use soft cloth to wipe the water drop or oil gently to make it dry, then use oil-free cotton cloth or paper soaked with alcohol or detergent to wipe from the lens center to outward. It is ok to change the cloth and wipe several times if it is not clean enough.

Note

- **This manual is for reference only. Slight difference may be found in the user interface.**
- **All the designs and software here are subject to change without prior written notice.**
- **All trademarks and registered trademarks mentioned are the properties of their respective owners.**
- **If there is any uncertainty or controversy, please refer to the final explanation of us.**
- **Please visit our website or contact your local service engineer for more information.**